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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,869	03/16/2004	David K. Biegelsen	119098	1573

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EXAMINER
KURR, JASON RICHARD

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/800,869	Applicant(s) BIEGELSEN, DAVID K.	
	Examiner Jason R. Kurr	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4 and 19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norris (US 5,889,870) in view of Norris et al (US 6,850,623 B1).

With respect to claim 1, Norris discloses a method for transmitting audio information, comprising: synthesizing a carrier signal (fig.2 #60) and a side band signal (fig.2 #62); encoding the side band signal with the audio information (col.11 ln.8-16); and transmitting the carrier signal and encoded side band signal to a plurality of transducers (fig.2 #20, col.15 ln.28-42); and transmitting the carrier signal and encoded side band signal from the plurality of transducers (fig.2).

Norris (US 5,889,870) does not disclose expressly wherein the phase relationships are adjusted to form a focused hypersonic beam.

Norris et al (US 6,850,623 B1) discloses a method for transmitting audio information wherein adjusting phase relationships of a plurality of hypersonic signals produces a variably focused and directed hypersonic beam (col.3 ln.46-57, col.4 ln.21-44).

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the phase shifting methods of Norris et al (US 6,850,623 B1) in the invention of Norris (US 5,889,870) to actively adjust the phase of the carrier signal and the encoded side band signal relative to each other.

The motivation for doing so would have been to increase the maximum audio output, as taught by Norris et al (US 6,850,623 B1) on column 4 lines 26-29 by minimizing any phase error. This would allow a user to project the beam containing audio information at longer distances than if the phases were not maximized.

With respect to claim 2, Norris (US 5,889,870) discloses the method of claim 1, further comprising: generating a plurality of signals (fig.2 #38,42) based on the encoded side band signal and the carrier signal; and generating hypersonic wavelets (fig.2 #30,32), each of the wavelets generated based on one of the signals.

Norris (US 5,889,870) does not disclose expressly wherein the phase relationships are adjusted to form a focused hypersonic beam.

Norris et al (US 6,850,623 B1) discloses a method for transmitting audio information wherein adjusting phase relationships of a plurality of signals forms a focused hypersonic beam (col.4 ln.21-44).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the phase shifting methods of Norris et al (US 6,850,623 B1) in the invention of Norris (US 5,889,870).

The motivation for doing so would have been to increase the maximum audio output, as taught by Norris et al (US 6,850,623 B1) on column 4 lines 26-29. This would

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allow a user to project the beam containing audio information at longer distances than if the phases were not maximized.

With respect to claim 3, Norris (US 5,889,870) discloses the method of claim 1, further comprising: selecting one or more carrier signals; encoding one side band signal with unique audio information for each of the carrier signals (col.11 ln.8-16); and transmitting the carrier signals and encoded side band signals in one or more focused hypersonic beams, each of the hypersonic beams aimed at a different direction than other one of the hypersonic beams (fig.2, col.15 ln.28-42).

With respect to claim 4, Norris (US 5,889,870) discloses a computer readable medium or a modulated signal (fig.2 #42) being encoded to perform the method of claim 1 in conjunction with a hypersonic transducer (fig.2 #20).

With respect to claim 19, Norris (US 5,889,870) discloses a hypersonic transducer, comprising: means for synthesizing a carrier signal and a side band signal encoded with audio information (fig.2 #24, col.11 ln.8-16); means for transmitting the carrier signal and the encoded side band signal to a plurality of transducers (fig.2 #20, col.15 ln.28-42); and transmitting the carrier signal and encoded side band signal from the plurality of transducers (fig.2).

Norris (US 5,889,870) does not disclose expressly means for adjusting the phase relationships of the carrier signal and the encoded side band signal to form a focused hypersonic beam.

Norris et al (US 6,850,623 B1) discloses means for transmitting audio information wherein adjusting phase relationships of a plurality of hypersonic signals produces a variably focused and directed hypersonic beam (col.3 ln.46-57, col.4 ln.21-44).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the phase shifting means of Norris et al (US 6,850,623 B1) in the invention of Norris (US 5,889,870) to actively adjust the phase of the carrier signal and the encoded side band signal relative to each other.

The motivation for doing so would have been to increase the maximum audio output, as taught by Norris et al (US 6,850,623 B1) on column 4 lines 26-29 by minimizing any phase error. This would allow a user to project the beam containing audio information at longer distances than if the phases were not maximized.

Response to Arguments

Applicant's arguments filed 7 July 2006 have been fully considered but they are not persuasive.

With respect to Applicant's arguments concerning claim 2 on page 4 of the Remarks, Applicant states, "Norris does not disclose adjusting the phase relationships of signals in order to actively control the focus of a hypersonic beam". The Examiner recognizes that during the personal interview on May 23, Examiner's Kurr and Chin agreed that if language directed to actively adjusting the phase relationships between signals were included in the claims, **for the purpose of controlling the directivity or focus of the hypersonic beam (beamforming)**, would distinguish the claims over the

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prior art of record. The independent claims 1 and 19, as presented, merely state that a variably focused and directed hypersonic beam is produced. Hence, there is no disclosure of the control of the directivity or focus of the beam by adjusting phase relationships as discussed in the personal interview. Norris (US 6,850,623 B1) discloses the adjusting of phases (minimizing phase errors) in order to prevent unintentional beam steering, which reduces output and directivity (col.3 ln.46-57)(col.4 ln.20-44), hence Norris teaches the production of a focused and directed hypersonic beam as presented in the amended claims 1 and 19.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

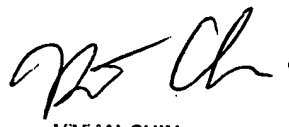
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Kurr whose telephone number is (571) 272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-8300. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JK
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